

Remarks

These remarks are made in response to the above-cited Office Action which requested clarification of terms and language used in the claims.

The use of the term inhomogenous refers to a geometrical change in the shape of the resonator. Inhomogenous itself is defined in the Oxford English Dictionary, 2nd Edition (1989) as "not of uniform nature throughout." It is defined in Merriam Webster's Collegiate Dictionary (1996) as "a part that is not homogenous with the larger uniform mass in which it occurs," and it is also defined in Academic Press Dictionary of Science and Technology as "the property of a solid or liquid whose physical properties vary with position, making the analysis of stress and strain in the medium much more difficult." Copies of the reference citations are appended to this response. Mitskevich, a reference cited by the inventor in the Document Disclosure statement, further refines and defines the use of the term when applied to ultrasonic resonators as "Longitudinal-torsional mode vibration systems are rod systems, which, when driven in a longitudinal mode, are capable of generating a torsional vibration component by virtue of a certain inhomogeneity in the cross section of the rod." A copy of this citation is further provided the examiner with this response. Within the specification of the application, reference is also made on pages 9 and 10 to Mitskevich's use of the term and identification of those portions of the resonators having this property are defined on pages 10, 11 and 12 and shown in Figures 2, 3 and 4. The inventor therefore believes that not only is inhomogeneity a well known scientific term but also established as a term familiar to those skilled in the art and requests the examiner's permission to use this word in the claims.

The term spiral and its relation to inhomogeneous is defined in the specification on page 3, second paragraph, as "The resonators described by Mitskevich were made by creating an inhomogeneous cross section along the length of an otherwise uniform bar and then twisting the bar along its length. One way to create an inhomogeneous cross section to place grooves along the length of what was otherwise a round bar to create flutes. The resonator is then physically twisted about its axis, spiraling the grooves." It is further defined subsequently in the same paragraph as "The same structure can be obtained, and was evaluated by Mitskevich, by using a conventional twist drill or by machining the grooves into the bar. L-T resonators can also be made by twisting a bar containing a rectangular cross section about its axis to produce a spiral in exactly the way that drills were first made."

The connection point for receiving vibration is defined in the specification on page 12, lines 1-3 as the point of connection between the electro-mechanical transducer and the longitudinal – torsional resonator. This point is also referred to on page 11, second full paragraph, first sentence.

The hole extending from the connection point to the tissue contacting tip is shown in Figure 4 of the specification as item 34, and is also referenced on page 7 in the section Reference Numerals in Drawings. This hole is described further on page 11, second full paragraph.

The applicant has endeavored to respond completely to the examiner's queries and requests for clarifications and now believes that the claims are in condition for allowance and respectfully requests the same. The applicant, an independent inventor, also respectfully requests assistance from the examiner in placing the new claims entered in condition for allowance.

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